



Carnegie Mellon
Software Engineering Institute



Standard CMMISM Assessment Method for Process Improvement (SCAMPI): Current Status and Plans

Geoff Draper
Harris Corp.

gdraper@harris.com

Rick Hefner
TRW

rick.hefner@trw.com

David H. Kitson
SEI

dhk@sei.cmu.edu

Donna Dunaway
SEI

dkd@sei.cmu.edu

**Software Engineering Institute
Carnegie Mellon University
Pittsburgh, PA 15213-3890**

**Sponsored by the U.S. Department of Defense
© 2001 by Carnegie Mellon University**

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE MAR 2001		2. REPORT TYPE		3. DATES COVERED 00-00-2001 to 00-00-2001	
4. TITLE AND SUBTITLE Standard CMMISM Assessment Method for Process Improvement (SCAMPI): Current Status and Plans				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Carnegie Mellon University,Software Engineering Institute,Pittsburgh,PA,15213				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES 13th Software Engineering Process Group Conference (SEPG 2001), 12-15 March, New Orleans, LA.					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 22	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			



Agenda

Current Status and Plans

SCAMPI Lead Assessor Track

Frequently Asked Questions



Current Status of CMMI Assessment-Related Products

ARC V1.0 and SCAMPI V1.0 published in 2000

Special assessment team (AMIT) chartered and operating to address key assessment issues for V1.1 timeframe



AMIT Purpose / Charter

Evolve SCAMPI v1.0 method and resources to v1.1 by Fall 2001

- **Maintain a comprehensive method**
- **Incorporate quantified improvements to satisfy stakeholder objectives and performance goals**
- **Consider aspects beyond the SCAMPI method, such as model refinements, team effectiveness, training, tools, and resources.**

Formulate a CMMI formal, rigorous appraisal method that:

- **Supports both assessments and evaluations in an integrated method description, with implementation guidance**
- **Meets ARC v1.0 class A requirements, with revisions proposed by the AMIT to reflect the addition of evaluations**
- **Provides accurate and repeatable results, with defined measures to quantify improvements**
- **Improves the appraisal efficiency and effectiveness relative to CMMI phase I pilots**
- **Does not invalidate the investment of adopters of SCAMPI v1.0**

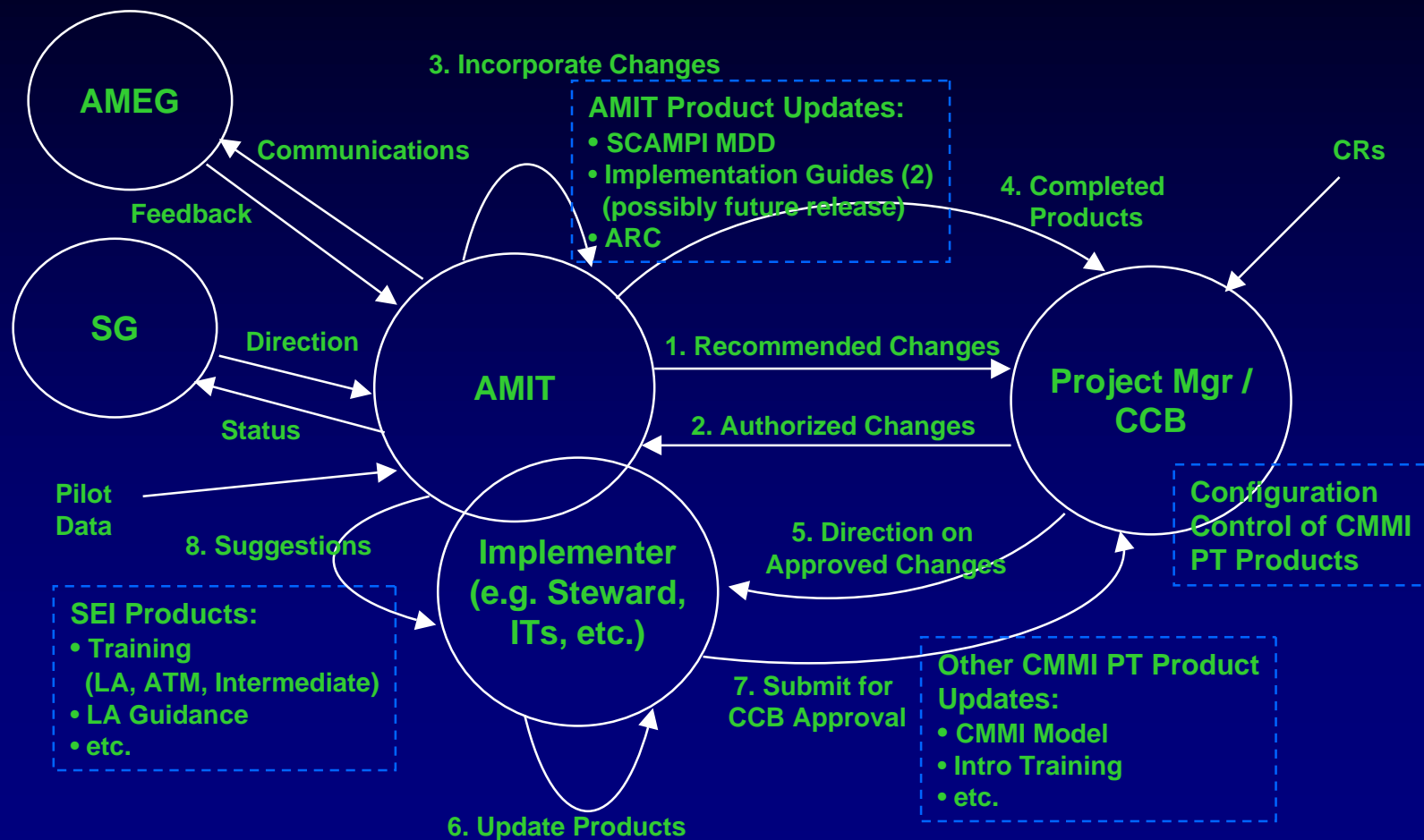


AMIT Membership

Name	Organization	Phone	Fax	Email
Kim Angstadt	Lockheed Martin	(443) 436-7870		kim.d.angstadt@lmco.com
Jim Armstrong	Software Productivity Consortium (SPC)	(703) 742-7185		armstron@software.org
Rick Barbour	SEI	(412) 268-1859	(412) 268-5758	reb@sei.cmu.edu
Dan Bennett	USAF, Hill AFB (STSC)	(801) 775-5727		dan.bennett@hill.af.mil
Ben Berauer	Raytheon	(727) 302-7693	(727) 345-6237	bfbcb@eci.esys.com benberauer@ieee.org
Geoff Draper	Harris Corporation	(321) 727-5617	(321) 727-4602	gdraper@harris.com
Bud Glick	Motorola	(847) 523-3255	(847) 523-8534	bud.glick@motorola.com
Kelly Gunning	BAE Systems	(858) 592-5894		kelly.gunning@baesystems.com
Will Hayes	SEI	(412) 268-6398	(412) 268-5758	wh@sei.cmu.edu
Rick Hefner	TRW	(310) 812-7290	(310) 812-1251	rick.hefner@trw.com
Dave Kitson	SEI	(412) 268-7782	(412) 268-5758	dhk@sei.cmu.edu
Gene Miluk	SEI	(412) 268-5795	(412) 268-5758	gem@sei.cmu.edu
John Roberts	DCMA	(617) 753-4123	(617) 753-4123	jroberts@dcmde.dcma.mil
Charlie Ryan	SEI	(781) 377-8324	(412) 268-5758	ryan@sei.cmu.edu



AMIT / AMEG Interfaces





Evaluations

DoD sponsor request for integrated CMMI appraisal method

- Internal Process Improvement (Assessments)
- External Supplier Selection and Monitoring (Evaluations)

Document format based on SCE v3.0 method description and implementation guide

Focus on method; avoid non-technical issues relating to deployment

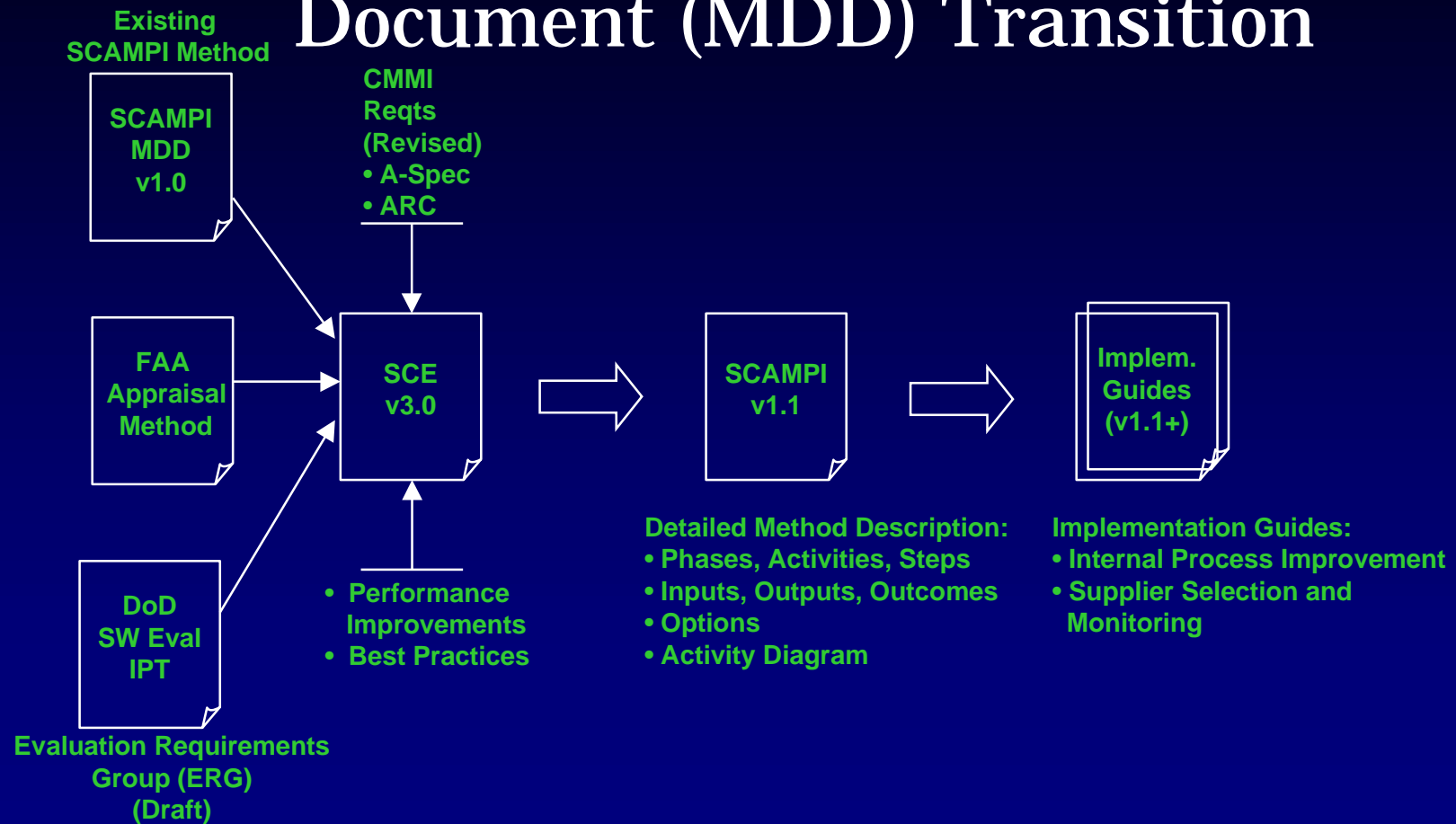
- Policy, resources, training, etc.

Consider draft evaluation requirements from DoD / Industry Software Evaluation IPT





SCAMPI Method Definition Document (MDD) Transition





AMIT Initiatives Under Consideration

Integrated Data Collection and Validation Approach

- “Triage” Concept - opportunistically use data collection (e.g., questionnaire, object evidence) to narrow the focus for further investigation and team emphasis
- Explicit practice implementation indicators - expectations and criteria for evidence agreed upon prior to appraisal
- Greater appraisal team focus on validation rather than discovery

Best Practices for Productivity Enhancement

- Collecting feedback from assessment community

Incremental Assessments

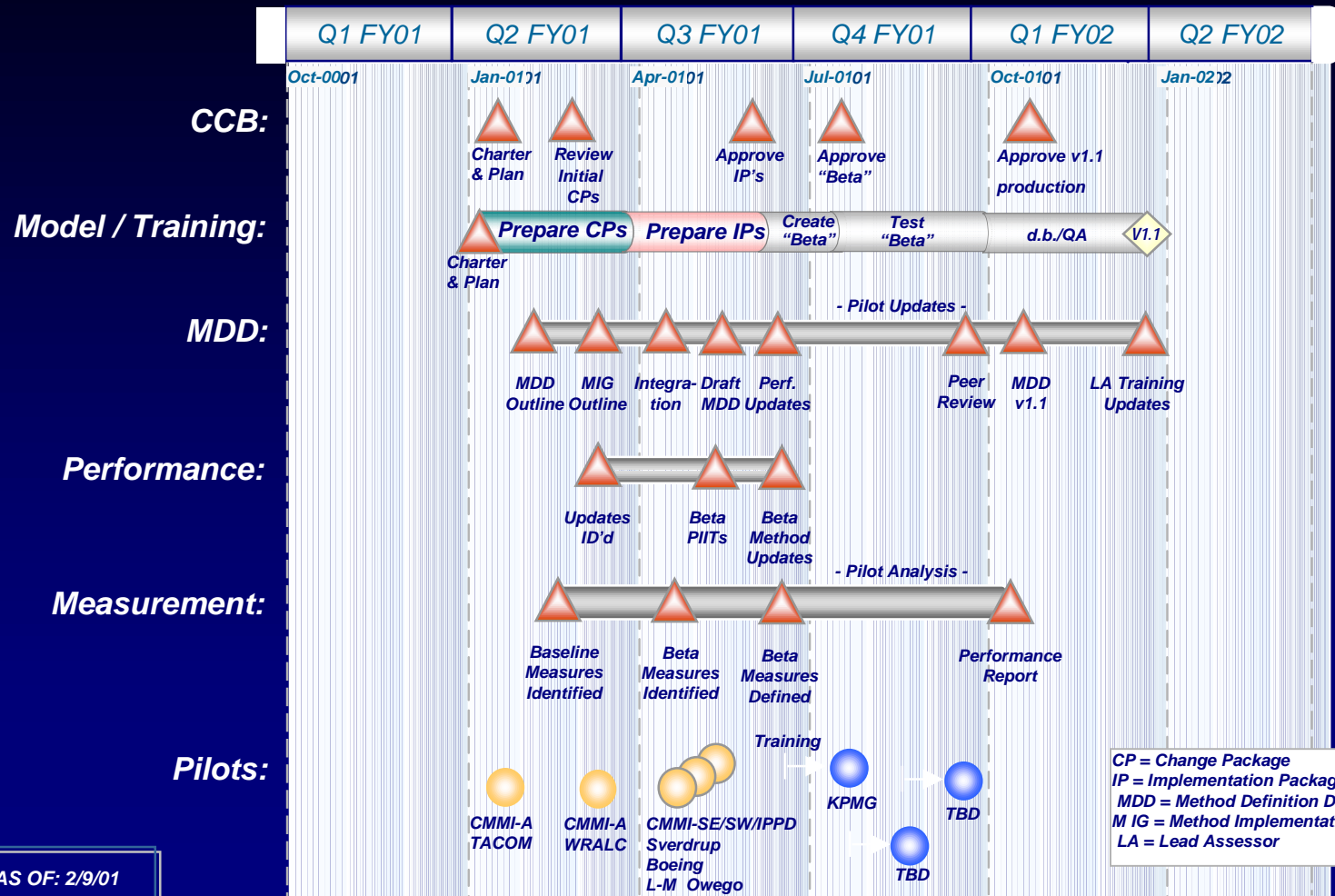
- Pre-planned partitioning of assessment scope (e.g. PA categories, maturity levels); lower priority than performance improvements

Delta Assessments

- Partial re-assessment to validate incorporation of past deficiencies



CMMI AMIT Schedule



AS OF: 2/9/01



SCAMPI Lead Assessor Track

5-Day SCAMPI Lead Assessor training being delivered

5-Day Intermediate CMMI model course being delivered

SCAMPI Lead Assessor “kit” materials being delivered via CD to authorized SCAMPI Lead Assessors

Transition partner web site progressing

- **Authorized SCAMPI Lead Assessors will be notified by SEI when they can establish their accounts**



SCAMPI Implementation Model

The SCAMPI implementation model (SIM) is intended to provide a way of thinking about the various constraints and considerations that apply to the application of SCAMPI to a specific assessment instance

Lead Assessors need to clearly understand the “degrees of freedom” they have when planning an assessment

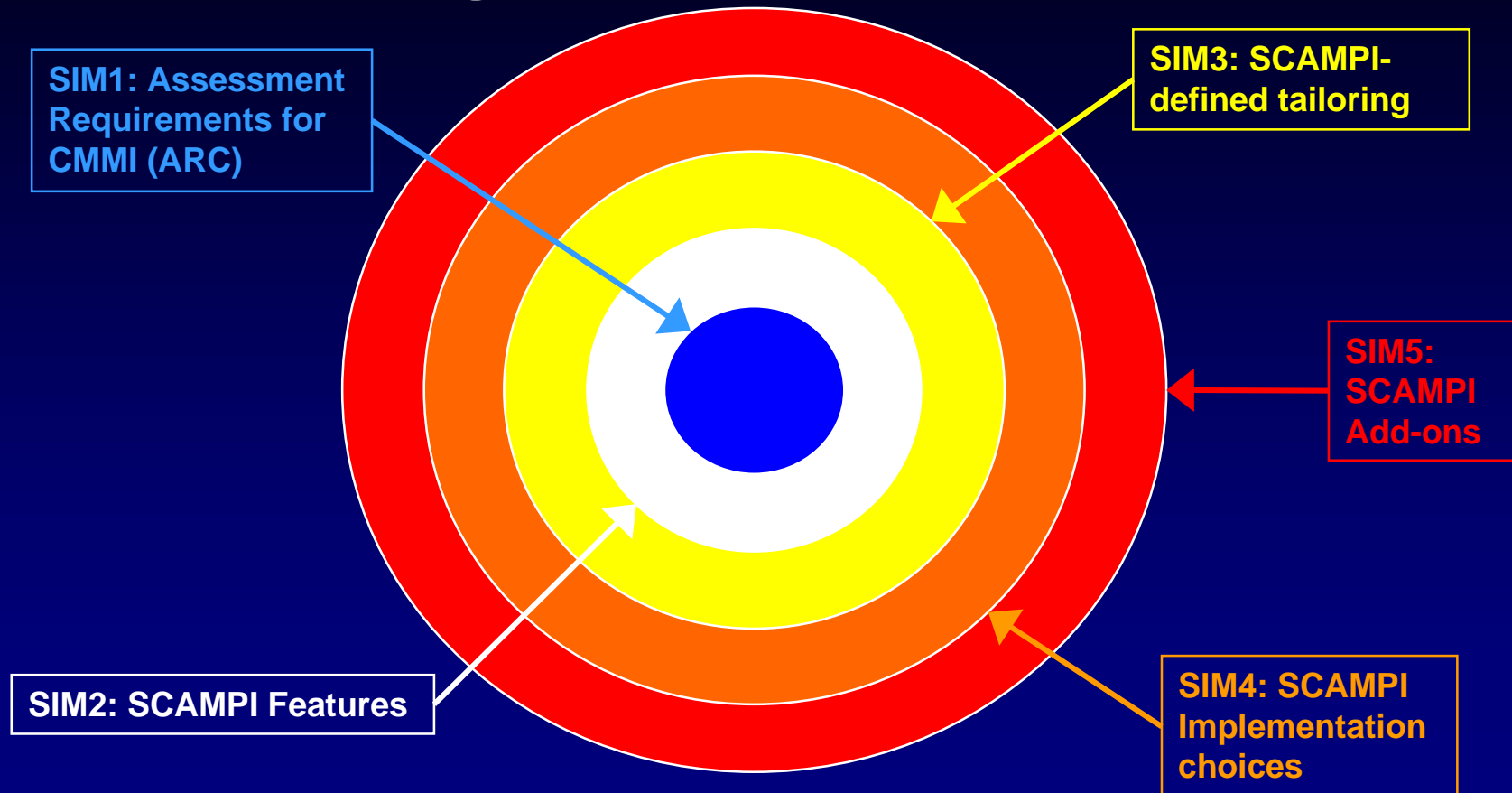
- **Where can there be no deviation from what is prescribed by the method?**
- **Where can alternative implementations be considered?**
- **Where are there opportunities for customization?**

Why alternative implementations and/or customizations?

- **Adapt method to special circumstances**
- **Exploit opportunities for additional efficiencies**
- **Take advantage of special circumstances**



SIM Ring View





Utility of SIM

Provides a simple way of classifying and organizing method features so that it is apparent

- **What the origin of the feature is**
- **What degree of freedom the lead assessor has for customization**
- **What the implications of deviating from the feature are**

Any feature in the implemented method will be assignable to at least one level of SIM



SIM Utility -2

Method Implementation Feature	SIM 1	SIM 2	SIM 3	SIM 4	SIM 5
Consensus is used as the decision-making process when determining the validity of observations, creating findings, and establishing ratings	X				
The sponsor and the assessment team leader must approve the contents of the assessment plan prior to conducting the assessment.	X				
A minimum of one assessment team member must be from the organization being assessed.		X			
A process area may be assigned the rating of "partially satisfied"			X		
Process area worksheets (Excel) are used to assist in data collection and validation				X	
Provide Malcolm Baldrige equivalent "score" for Process Management Category					X



Where are Things Headed?

Improved SCAMPI method definition; clearer tailoring choices

Single integrated method for internal process improvement and external capability evaluation

A range of assessment choices for customers with clear cost/benefit differentiation and better cost/benefit performance



Frequently Asked Questions - 1

What are the key differences in SCAMPI vs. CBA IPI?

Rules of corroboration

- Added emphasis on use of questionnaire as an independent data source (in addition to interviews, documentation)

Explicit consideration of each specific and generic practice (or alternative practices)

Scoping and planning an assessment is more challenging

- E.g., for multiple discipline assessments, team experience must encompass all disciplines



Frequently Asked Questions - 2

How does the government intend to do evaluations?

Several potential options under discussion by the OSD
Software Evaluation IPT

- External government team conducts SCAMPI evaluation, using the implementation guidance
- Combined government/industry team conducts joint SCAMPI appraisal
- Various reuse options



Frequently Asked Questions - 3

Can I assess just the SW projects in my organization, even if we do SE?

Yes

How do I assess a set of projects containing both SW and SE processes?

Each process area/goal/practice must be considered for both SW and SE if they are in scope

- E.g., Software Development Plan vs. System Engineering Management Plan vs. Integrated Management Plan

Assessment results could be given separately for SW and SE

Statement of results should include organizational and model scope

***“The software projects of Division XYZ of Corporation ABC
were assessed as CMMI Maturity Level 3
(excluding Supplier Agreement Management) on April 1, 2001,
by an internal team using the SCAMPI method”***

vs.

“Corporation ABC is a Level 3”



Frequently Asked Questions - 4

How do I transition from CBA IPI LA to SCAMPI LA?

- Introduction to CMMI training (staged or continuous)
- Intermediate training
- SCAMPI Lead Assessor training

I'm just starting - how do I become a SCAMPI LA?

- Experience on 2 qualified assessments (e.g., CBA IPI, EIA 731, SCAMPI)
- Introduction to CMMI training (staged or continuous)
- Intermediate training
- SCAMPI Lead Assessor training
- Observed leading a SCAMPI assessment by an qualified Observing Lead Assessor

Will my SCAMPI authorization be affected by SCAMPI v1.1?

- At most, 1-day upgrade training



Frequently Asked Questions - 5

How long does SCAMPI take?

- Goal is two weeks on-site (10-hour days) to assess SW and SE for 4 projects for the Level 2 & 3 process areas
- Pilots have taken significantly longer than the goal
- AMIT requested ideas and best practices from over 50 experienced assessors and evaluators
- Their ideas will be incorporated as suggestions in the implementation guides to reduce the on-site time

What other methods can I use to do assessments?

- SCAMPI (and other ARC Class A assessments) are intended for mature organizations seeking detailed, highly accurate results, and for benchmarking with industry
- Class B and C methods are appropriate for other situations (Buyer beware!)



For More Information

<http://www.sei.cmu.edu/cmmi/>